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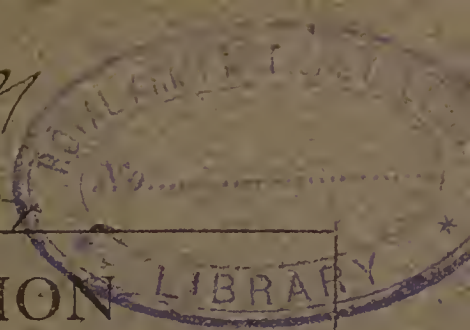








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THE RELATION  
OF THE  
Medical Department  
TO THE  
HEALTH OF ARMIES

The Enno Sander Prize Essay  
For 1904

By Lieutenant Colonel William Hill-Climo, M.D.,  
LONDON, ENGLAND.  
LATE HONORARY SURGEON TO THE VICEROY OF INDIA;  
ASSOCIATE MEMBER OF THE ASSOCIATION OF  
MILITARY SURGEONS OF THE  
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Reprint from the  
Journal of the Association of Military Surgeons  
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CARLISLE, PENNSYLVANIA,  
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## THE RELATION OF THE MEDICAL DEPARTMENT TO THE HEALTH OF ARMIES.

By LIEUTENANT COLONEL WILLIAM HILL-CLIMO, M.D.  
LONDON, ENGLAND.

LATE HONORARY SURGEON TO THE VICEROY OF INDIA;  
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"He who has decided on war, or is convinced that his adversary has done so, must forthwith open hostilities, if it be to his advantage from a military point of view. No political doubt, no moral scruple must keep him from it." *The Military Lessons of the South African War*, by General von der Goltz in the November 1903 number of the *National Review*.

THE subject of this paper is singularly opportune, for the principle formulated in the above quotation has received the acceptance of all the great Continental powers, and it will have to be reckoned with in the future, but without this warning the history of modern wars shows that time is all important hence that army which is best prepared for war on the outbreak of hostilities, and which possesses the greatest mobility, is the most efficient. It is from this standpoint that I propose to discuss "The Relation of the Medical Department to the Health of Armies," and in the belief that hitherto the Medical Department in peace and in war has not been effectively employed, for, notwithstanding the progressive development of sanitary science, medical officers are not afforded much greater opportunity for putting it into practice than when sudden death was ascribed to the Visitation of God.

The bulk of this paper was finished before the outbreak of hostilities between Russia and Japan. The progress of this war gives substantial support to the views herein expressed.



Preparedness for war depends upon military efficiency which primarily depends upon the physical efficiency, in other words upon the health of the troops. The reference is to the soldier presumably healthy, who is at his duty\*, and who is living in barracks, and to the relation which the medical department bears to him; theoretically a certain responsibility rests with the department to keep the soldier in health, but it is a responsibility which by design has been divorced from power and which consequently cannot be enforced. Many causes have contributed to this result of which prejudice, apathy, and the conservative instincts of armies are important, but standing out as the *causa causans* is disbelief founded on ignorance not only on the part of the soldier, but of others in high places, of what sanitary science is capable of doing for the preservation of health, and for the prevention of epidemic diseases. In the light of recent discoveries it will be no longer possible to take shelter under Dr. Johnson's famous plea, "honest ignorance, my dear madam, honest ignorance."

This want of appreciation of medical science has restricted the work of the medical department in peace to attendance on the sick in hospital, and to the training of sick attendants and bearer companies. Thus "cramped, cabined and confined" the rôle of the medical department has been to advise only in sanitary affairs and from the nature of the case this advice has been of a desultory character being sometimes partial, or it is not timely, or it is attended with practical difficulties which have not been fully considered, for which the medical department is blamed, when the fault lies with the system under which it works. We live in an age of military reform; officers are advised to take the initiative, and to assume responsibility; and for this purpose decentralization and sub-division of work are suggested yet the medical department remains much the same as it always was, and it is not afforded the means of carrying out those beneficent measures, which sanitary science places at its disposal. The question is simple, it is whether the medical department is to remain advisory, or is to be given executive power; before this paper is finished it will be shown that conception and execution are inseparable.

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It is for Governments to decide this question; towards this object it will be helpful to give a summary of the duties which the progress of modern warfare demands from the medical department, and which medical science gives it the power to execute, and to compare them with those actually performed at the present time. These duties are in peace (1) the selection of the recruit, and his health preparation for training, (2) the safeguarding of the health of the soldiers serving with the colors, (3) the treatment of the sick in hospital and during convalescence, (4) the prevention of epidemic diseases and (5) preparation for war. In war its duties are the care and treatment, including transport, of the sick and wounded, and the prevention of zymotic diseases notably of dysentery and enteric fever.

Nations which are compelled to adopt conscription because their frontiers are coterminous, and which at any time may become hostile, are not embarrassed with recruiting difficulties, for their supply of recruits, who are physically fit for immediate training, is ample, and their enlistment is automatic, but for nations, whose garrisons are spread over many continents, and whose system of recruitment is voluntary, the problem is a complicated one. The two great powers, which adopt it, are Great Britain, and the United States of America; they no longer count upon insular isolation, or upon supremacy on one continent as a complete protection, their interests are world wide, and the power to protect them must be commensurate. Steam and electricity have revolutionized the military positions of most countries, and have given to those, which are ready for war, a supreme advantage. Bearing these facts in mind it is the relation of the medical department to the health of armies which are recruited by voluntary enlistment; which will be chiefly considered, but the main principles, especially those relating to war, are applicable to all armies however raised and wherever serving.

The selection of the recruit is the first necessity in the organization of military forces.\* In so far as capacity for military service can be determined from the standards of height, weight, and chest measurement, and by freedom from organic diseases

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\*Military Hygiene. Munson.

this duty can be equally well performed by a civil practitioner as by a medical officer of the regular army, but there is something more required, for the examining medical officer must be able to say that the recruit is fit to begin training, or, if not, what health preparation he should undergo, and he must be able to forecast the probable effect which military service will have on his future efficiency. Theoretical and general medical knowledge is not sufficient, it needs experience which can only be gained by a close association with the soldier in his work, and by being in constant touch with military affairs.

Voluntary service armies in war are largely supplemented by auxiliary forces, militia, yeomanry and volunteers; in composite armies so raised, often hurriedly, the medical examination of recruits, etc., is not satisfactory for the reason just given, besides medical officers of the auxiliary forces through local circumstances are more susceptible to social and official pressure. In war the dearth of men is so great that the regulations are set aside, and sometimes political exigency is satisfied with a paper army that is to say men are enlisted, and shown on the strength, who would never be selected, by experienced medical officers of the regular army, as fit for field service, and who by no possibility can reach the fighting line. Recent wars have shown that such laxity jeopardizes the success of military operations, fills the hospitals with sick, and paralyzes the work of the medical service for which the medical department is afterward blamed. In the performance of this duty the medical service must be granted greater independence and freedom of action.

The safeguarding the health of the soldiers serving with the colors rests with the officer commanding the troops which is in accordance with regulation and with custom; the correctness of this principle cannot be disputed for it is essential for success in war, it is the way it works out in practice which is so objectionable because from the General Officer Commanding-in-Chief this duty runs down the whole gamut of command to officers commanding regiments and corps units the medical department being only called upon for an opinion as may be considered necessary. This system is doomed to failure because of the limited action



which is allowed to the medical service, because the executive is entrusted to unskilled hands, and because the responsibility is frittered away in so many different agencies. Were army affairs managed as a commercial undertaking and run on business lines the General officer, as Managing Director, would ask himself this question: How can the health of the army be best safeguarded with the least danger to military efficiency, and for this purpose what is the best agency?

As it is universally acknowledged that for the successful prosecution of enterprises of war, the authority of the officer commanding the troops in all matters relating to his command must be supreme there has been considerable difference of opinion as to what Agency and in what manner this duty should be performed. Recently two schemes have been placed prominently before the British public, which may be said to have originated in the lamentable loss of life from preventable diseases, which took place in the South African War. One of which, voiced by Dr. Leigh Canney, is based upon the "responsibility of all non-medical officers for the executive sanitary work of camps and units," and "for the incidence of enteric, dysentery and cholera in their units" the medical department supplying sanitary officers "in one of two capacities (a) advisory at the request of the officers of this camp or unit and (b) critical and peremptory for purposes of inquiry after every outbreak of these diseases."\* The other has been from time to time suggested in military and other magazines, and has recently found strong support in the "Report of the Commission on the Nature, Pathology, Causation and Prevention of Dysentery and its relationship to Enteric Fever" of which the War in South Africa was the occasion. It is that the Medical department should supply executive sanitary officers by dividing the department into two branches (a) the medical branch and (b) the health branch.†

The relation of the medical department to the health of armies will be determined by the adoption of one or other of these

\*"The Abolition of Typhoid (Enteric Fever) Dysentery and Cholera in Armies" by Leigh Canney, M.D. (London) in the October 1903 number of the *United Service Magazine*.

†Personally I prefer this branch to be designated the "Sanitary" as associated with environment, and the prevention of disease as well as with the individual; it will be so referred to in this paper.

proposals. The author of the non-medical officer executive sanitary scheme does not appear to have considered the question in all its bearings for it ignores the necessity of these officials possessing medical knowledge of the individual. Leaving out of consideration personal vulnerability to disease, which sometimes even the skilled physician finds difficult to distinguish, I would ask how is it possible with such an agency to take effective sanitary precautions in the case of large bodies of men gathered together in limited areas unless the health of the individuals composing them is kept under constant observation as well as the environment? With an army in the field the necessity is the greater because sanitary defects so speedily occur and are so quickly followed by epidemics, hence one case of epidemic disease, not promptly recognized, may give rise to incalculable damage. Besides this scheme fails to take account of the fact that the chief duty of the medical department is with the person of the soldier, and that everything which detracts from that position is injurious to the welfare of the individual and to the efficiency of the medical service.

This proposal seems not only to be based upon the non-recognition of the importance of sanitary work, but of the professional duties of regimental officers, which are to train the soldier and to fight and to beat the enemy. The proposal belittles both the work of the soldier and the work of the sanitarian. I have dealt with this subject at this length because it has obtained some support, but in my opinion it is quite unworkable. Another and better way will be found in the creation of a health branch of the medical department which, while maintaining the responsibility of commanding officers for the health of their men, will associate the medical service with these officers in executive sanitary duties in a more direct form than at present exists as will be more fully detailed in the course of this paper.

The treatment of the sick in hospital and during convalescence is taken together because until the soldier returns to duty, dies or is invalided the medical department should be the sole responsible authority. At the present time medical officers in command of hospitals enjoy perfect freedom in hospital administra-

tion, and the relations of the medical department to corps, to which patients in hospital belong, are generally satisfactory, but this is not the case as regards convalescents that is of men either attending hospital or who on discharge from hospital have not yet been returned to duty; this subject is important and will be referred to again. Some medical officers have claimed that authority should be given to them to punish offences committed in hospital, but this claim has been rightly objected to because hospitals should not be associated with punishment in the mind of the soldier. There are other objections, equally forcible, which need not be discussed for the disciplinary power of making patients prisoners for breaking hospital regulations, etc., is sufficient for all practical purposes.

Malingers apart, of whom by the way it has been my good fortune to have met but few, there appears to be a disinclination on the part of the soldier to go into hospital; it is a very natural feeling, but it has been recently discussed as if the fault lay with the medical service; without accepting this dictum there is no doubt that for the maintenance of harmonious relations between the medical department and armies it is essential that hospital life should be made as comfortable and as homely as possible; soldiers should look upon military hospitals in the same light as civilian patients do upon civil hospitals; comfort is not incompatible with the maintenance of discipline and obedience to orders. Also there should grow up a feeling of trust between the sick and the medical staff of the hospital, which the medical department should in every way foster. Confidence in a patient springs from belief in his medical attendant; it cannot be manufactured by order. For the medical department to attain to this position of usefulness it must be specialized, which will entail certain modifications of organization to be presently described.

Specialization of work and co-operation are the two most important factors in human progress; the former is seen in its greatest developments in the navies of the great powers, and for armies, though it has not been brought to the same excellence, it is recognized as a powerful means toward success. Recent scientific discoveries have put within individual reach an excel-



lence in professions and in trades, which a few years ago was not attainable, now it is a doctrine which is preached from the house-top and it confronts us in every walk of life. Specialties have been successfully followed by the medical profession in civil life, and the progress of medical science shows that they will be still further developed in the near future to the comfort and happiness of the human race. It is time for the medical department to take this lesson to heart.

The sphere of usefulness of the medical service has been greatly circumscribed because with its conservative instincts it has clung to the old idea that medical officers, once commissioned, were fit for any and every post their department chose to employ them in, it is an anachronism, and it is only a variant of the pleasant Irish extravagance that "one man is as good as another and six times better." It spells failure. The medical department must march with the times; in selection, if it be righteously used, lies the road of progress, but for this purpose the department must make itself acquainted with the merits of its officers as suggested in the article from which the following extract is taken.

"The first duty of the head of any department, and of none more than of the medical, is to make himself acquainted with the special merits of his senior officers. One medical officer may be a good physician, another a good surgeon, a third a good sanitarian, and a fourth a good organizer, while it is impossible to find all of these points of excellence in one and the same person there ought to be no difficulty for a department to be so informed that it would be able to employ its officers to the best advantage."\*

Without efficient and economical hospital administration the specialization of the department is impossible because of the expense, which can only be dealt with by gradation of work and co-operation of which the lowest rung of the ladder must be made the starting point. At the present time a great gulf separates medical officers from the non-commissioned officers and men of the medical corps, which must be bridged over. The work re-

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\*"Army Medical Organization" by Brigade Surgeon Lieutenant Colonel William Hill-Climo, M.D., Army Medical Staff (retired). December 1891 number *United Service Magazine*.

quires a highly technical training which the existing system of recruiting of the corps, and the previous education of its recruits make difficult, a subordinate medical service, such as exists in India, recruited from other classes and educated on a higher plane, is necessary; such a service would possess the confidence of the sick, and would be a sympathetic link between officers and men.

With the same object the nursing of the sick will have to be re-organized. It is a specialty for which women are best suited, they possess the natural gentleness and patience so necessary for this office besides they instinctively understand the details which make for comfort, details which the ordinary man looks upon as trifles, but which are of prime importance in the sick room. It is asking too much to expect these qualities in young men even when belonging to a superior class. Of course these changes will involve a re-organization of the army medical corps, which will afford the opportunity of utilising the services of the non-commissioned officers and men of the corps in other and not less important duties.

The care of convalescents, that is of men, who have returned to their regiments on discharge from hospital, but who are not yet fit for duty, has always been unsatisfactory; it affords another instance of divided responsibility between officers commanding regiments and the medical department; it is unsatisfactory to convalescents because, when they need it most, they are deprived of effective health supervision, but it is equally so to their comrades occupying the same barracks for they are thereby exposed to the danger of contracting such diseases as dysentery and enteric fever. The pernicious habit of allowing chronic cases of tuberculosis to live in barracks on discharge from hospital, while awaiting discharge from the service, needs no comment; financial, and not sanitary reasons have hitherto been chiefly considered. So also the detection of serious diseases in their early stages is made difficult and the segregation of infectious diseases is delayed by the want of personal supervision, which can only be secured by bringing the medical department into closer touch with the healthy soldier.

The measures which should be taken to prevent epidemic diseases in armies, are intended to meet two sets of conditions which are general and special; the former are common to all armies and relate to the soldier himself, to service and to military environment, and the latter to localities including endemic causes of disease and to climate.

Of the first set the conditions, which relate to the soldier, are his age and his state of health on enlistment, and his previous occupation. Certainly short service armies, which are raised by voluntary recruitment, are composed of younger men than formerly, and the youth of an army increases its susceptibility to epidemic diseases. The health of the recruit can only be determined from his appearance, his physical development, and a comparison of the causes of rejection with the diseases which the soldier suffers from during the first two years of his service. The direct effect of former occupation, that is of trade or employment is in many cases nil because the enlistment takes place at such an early age that sufficient time has not elapsed to produce permanent effects. Indirectly however the information which occupation gives of the social position, and of the environment of the recruit is of value in estimating the liability of an army to sickness, and its health efficiency in war.

The toxic effects of military service acting on the young and immature soldier are well known to Army medical officers of experience, who alone are competent to deal with them. The point I want to make clear, it is all important, is that it is impossible to have an efficient sanitary service unless its executive officers possess medical experience as well as sanitary knowledge. The present sanitary organization of most armies does not conform to this principle, and in consequence little or nothing is done to put the soldier in a state of defence against zymotic diseases for the medical department has not the power of active intervention, though it is the only authority which could advantageously do so.

Military environment includes all other health conditions, which are common to large bodies of men living together in camps or buildings, which even when well drained and sewered, speedily undergo sanitary deterioration, and become dangerous



to health. It is the same in peace as in war though the defects in peace are not so obvious, nor their effects so immediate. The sanitary faults to which reference is now made, are not obtrusively objectionable, but they are insidious and potent for evil, and require a trained sanitary service for their detection and correction.

An army, which has to provide foreign garrisons, is confronted with health conditions, which are diverse in character, and which are referable to locality and to climate. Endemic diseases have to be considered in relation to topographical distribution, and to the sanitary habits of the people including their social and economic conditions; also the seasonal prevalence of such diseases as dysentery and enteric fever must be investigated in relation to rain fall, to sub-soil temperature, to prevailing winds, and to the rise and fall of underground water. These details are mentioned to show how imperfectly the sanitary service of armies is organized at the present time, for to make it efficient there is required a Medical Intelligence branch of the department to deal with all these questions. The success which has followed the measures taken by the medical department of the United States Army to banish yellow fever from Cuba, and of those, employed by the British Government on the West Coast of Africa and in the Delta of the Nile, to destroy the malarial pest, affords abundant proof.

In the foregoing statement I have described the ideal relations of the medical department to the health of armies in peace upon which their military efficiency in war so largely depends and for the better attainment of this object I suggested that there should be a closer union between the medical department and armies in the training and work of the soldier. I also showed how the present sphere of duty of the medical department fell short of the ideal, and that certain changes in its constitution were necessary, particularly in reference to specialization of work, and to co-operation, to enable it to comply with the demands of modern warfare, and to meet the larger responsibilities which public opinion has imposed upon it. I now propose to discuss the special preparation for war which the department should

undertake during peace; it does not primarily refer to the mobilization of hospitals or to details of equipment, etc., but to what has not been inaptly termed the medical strategy of war, which hitherto has received but scant attention, though local conditions relating to supply, to means of transport, and to the suitability of the regulation equipment to climate require previous careful study to avoid unnecessary expense and useless labor of which the proof will be given later on.

The student of military history, who has followed the great wars of the last century, will appreciate my standpoint for he knows that the health of the troops and freedom from epidemic diseases are two important factors towards the success of military operations, and he will call to mind how successful operations were delayed, or nullified because the troops were unable to continue their advance owing to sickness. It is a danger which the medical department should foresee and guard against. Owing to the increased effective range of Artillery, and of small arms larger armies will be employed, more ground will be covered, and military operations will be continued for a longer period before the decisive battle is fought. In such circumstances the sanitary police of an army in the field becomes extremely difficult and it can only be successfully undertaken by the previous study of the topographical and sanitary conditions of the country.

The general staff of an army has to consider all possible war eventualities and to formulate plans of campaigns. As these duties are confidential it is impossible to say what has been done by any of the great powers, or to what extent the medical department of their respective armies has been consulted, but judging from experience it may be assumed that medical strategy has obtained but slight recognition. In the pigeon holes of the war departments of most countries there will doubtless be found schemes of defence and plans of campaigns, but it is questionable whether side by side any one of them there lies an appreciation of its medical requirements worked out by the medical department from personal inquiry, and from an actual study of the country and of the people. A few years ago to have advanced this demand would have been flouted at as mere folly, but today we know

that the neglect to have done so put the vital interests of a great empire in jeopardy.

The medical history of the South African war is instinct with proof, and affords a concrete example of the evils which follow the want of intelligent preparation, and co-operation. It is painful at all times to call attention to failure, but especially when it is associated with grievous loss of life, yet it is only in the bitter experience which follows failure that the road to prevention will be found. The same lesson may be learned from other wars, but the South African war is chosen as an illustration for though foreseen by some its advent was sudden, and the scale on which it was waged conformed to what a war, occurring between any two of the great powers, will be. Sometimes we are told that the South African war was so exceptional that it ought not to be accepted for future guidance, but many of the circumstances incidental to every war are exceptional and it is on the recognition of this fact that the present argument is based, for no war in every respect resembles another though general principles remain the same. As the general staff of an army is judged by its capacity to foresee and to provide for exceptional circumstances so also it is the duty of the medical department, and on the completeness or otherwise with which it fulfills this duty, it must stand or fall.

The neglect to prepare for war in peace has been the cause of the want of provision for the care of the sick and wounded as well as for the prevention of epidemic diseases, or to again borrow from military phraseology it has caused failure in the medical tactics of war, which has led to needless expense, and to much useless work. For instance the rules and regulations which refer to the personnel and to the equipment of field and general hospitals, are inelastic being of universal application, and not framed to suit climatic and other special conditions such as local sources of supply, etc. It simplifies mobilization to have fixed scales of establishment and of equipment, but their adoption in each case should not be obligatory, on the other hand they should be so comprehensive that from them the mobilization branch of the medical department could work out what is best suited for the

particular country, which happens to be the seat of war. Sir Frederick Treves thus graphically describes these tactical difficulties as they were observed by him in the South African War.\*

"Every field hospital is hampered by a theoretically complete outfit, which has to be dragged to and fro all over the country and it is an immense burden; we were dragging about things that under no circumstances would have to be used in South Africa for example. The outfit of the Field Hospital is suitable for any climate in the world, from the Polar regions to the Equator, it is an exceedingly elaborate outfit, it is complete on paper, and that has to be dragged all over the country."

And again "There is a stereotyped outfit for a Field Hospital or for a Stationary Hospital, any kind of Hospital, and that outfit has to be absolutely complete to the very smallest detail, and that has to be dragged all over the country from one place to another whether it is wanted or not. I suppose I should not be using any exaggeration if I said we could have thrown away quite a half of our outfit and not missed it."

The failure to adapt hospital organization in war to meet local and climatic conditions, grave as it was, was not the worst fault disclosed by the war, for the want of preparation to cope with epidemic diseases showed a lack of knowledge of the sanitary conditions, which obtained in South Africa before the war. These were an impure water supply, subsoil pollution, the prevalence of dysentery and enteric fever as endemic diseases among the civil population, and above all the phenomenal prevalence of enteric fever among the British troops quartered there, which was relatively greater than in any other foreign garrison, including India, for the first nine months of 1899; in war therefore it was not an epidemic but a pestilence, which might be expected. This statement is made not as a reflection on the medical department of the British Army, but to show how necessary it is to make ample medical provision betimes.

Indulgence is craved for the importunity with which this subject is pressed, but its importance, and the persistent neglect, which it has met with, claim for it wider recognition. The ex-

\*Report of the Royal Commission on the War in South Africa. Minutes of Evidence Vol. II.



perience of France in Madagascar, of Spain in Cuba, and of the United States of America in the Cuban and Philippine Campaigns shows that effective sanitation in the field cannot be successfully initiated unless founded on a thorough knowledge of locality and climate, and a careful study of the sanitary and economic conditions of the people. Its importance to military strategy is thus referred to by Sir Alfred Fripp.\*

“That is a point the medical profession can be of great use and may strengthen the hands of the Commander-in-Chief, if only he will let us help to prevent disease. And then, what we cannot get him to see—I am not speaking of the Commander-in-Chief in the late war—but what we cannot get the authorities to see is the strategic importance of it, which comes out very prominently if the figures are examined. If you look at the number of patients sick in Bloemfontein, and then calculate how much it cost the Nation to put each one of these men to the front. I believe it works out about £100 a man, and they went sick by scores and hundreds, as you know, from a disease which was to a large extent preventable. Then again just consider how much sooner Lord Roberts’ hands would have been set free to move from Bloemfontein and dash after the Boers up towards Johannesburg if it had not been for that heavy epidemic; and if he had been able to make that move forward earlier it would have saved the nation a considerable number of men, and a correspondingly large amount of money.”

This preparation for war requires a staff selected and carefully trained, to it should be allotted certain countries for investigation and report. When war breaks out some of the officers, who had been thus associated with the country which becomes the seat of war, should be appointed to the staff of the P. M. O. of the army as Intelligence Officers, etc. To train these officers will take time and to do the work satisfactorily must necessarily be slow and tedious; if the lessons of war were not so soon forgotten there would be no necessity to urge its importance. Such a service cannot be improvised, it is not less true of this service than of other military services to which the following reference

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\*Report of the Royal Commission on the War in South Africa. Vol. I.

was recently made by Mr. Balfour, the British Prime Minister.\*

"You cannot improvise guns; they take months to make. You cannot improvise a staff; they take years to educate. You cannot improvise officers, mere enthusiasm will not give you trained experts which you require."

Upon the completeness of this preparation will depend the efficiency of the medical service in war, in which its duty is the care and treatment of the sick and wounded, and the prevention of epidemic disease; for the former transport and shelter are the most important: were it possible to house the sick where they took ill, and to treat the wounded where they fell the mortality in war would be but a tithe of what it is, but the care of the sick and wounded is dominated by military necessity, and to meet this demand the first duty of the medical service is to secure their removal in the direction in which they must ultimately travel, that is toward the base unless they quickly recover.

The question to which attention is now invited is whether the existing medical organization, in which are included the relations of the medical department to other corps and departments, is best suited for the treatment of the sick and wounded in war; the medical arrangements for the care of the wounded on the battlefield will best illustrate the point owing to the large number, which simultaneously requires to be attended to. This subject has been recently discussed with singular ability in the *JOURNAL OF THE ASSOCIATION OF MILITARY SURGEONS OF THE UNITED STATES OF AMERICA*.† The treatment of the wounded on the battlefield is intended (1) in all cases to prevent infection by the application of the first field or first aid dressing, (2) in a great number of cases to alleviate shock and (3) in a lesser number of cases to arrest hemorrhage. The sooner after the receipt of a wound it is protected from infection and on the skill with which this work is done will depend the chance of recovery. Colonel Nicholas Senn in the paper just referred to makes the following statement:

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\*Extract from Mr. A. Balfour's speech at the United Club dinner at the Hotel Cecil, November 27th, 1903.

†"First Dressing on the Battlefield" by Colonel Nicholas Senn, M.D., Ph.D., LL.D., Chicago, Ill. Surgeon General of Illinois, Lieutenant Colonel and Chief of the Operating Staff with the Army in the field during the Spanish-American war; Professor of Surgery, Rush Medical College, Presented to the military section of the Madrid International Medical Congress. December 1903 number of the *JOURNAL*.

"In the treatment of the wounded, the first duty of the Military Surgeon at the front consists in protecting as many wounds as possible, and in the shortest space of time against subsequent infection, and this can only be accomplished by the first aid dressing, which meets all essential requirements, if properly applied."

The agency by which this dressing should be applied has been the subject of much controversy. Some authorities assert that only medical officers should do it, while others say that the non-commissioned officers and men of the army medical corps should assist, but it is manifestly impossible after a great battle for the officers and men of the corps alone to perform this duty *in time*; it follows that the wounded will have to do it for themselves or they will have to be assisted by their comrades.\* On this point Colonel Senn's conclusions are.

"In all great wars the number of wounded exceeds the working capacity of the medical officers at the front, and consequently most of the first-aid dressings must be applied by the wounded themselves, their comrades and non-professional non-combatants."

He enforces his views by giving the number of wounded in some of the great battles of the past, of which the following is an extract.

NUMBER OF WOUNDED IN GREAT BATTLES OF THE PAST.

Battle of Inkerman	Russians	9,406
" " "	French and English	13,709
" " Gettysburg	Federals	13,709
" " "	Confederates	14,500
" " Sedan	French	14,000
" " "	Germans	6,483

Surgeon General Stevenson, Professor of Military Surgery in the Royal Army Medical College, London, holds the same opinion, and he shows how impossible it is even to collect the wounded, much less to remove them to the dressing stations and field hospitals, on the day of battle as shown in the following extract.†

\*In any future reference to this dressing it will be described as "first aid," which so felicitously conveys the idea of agency.

†"Wounds in War. The Mechanism of their Production, and their Treatment." By Surgeon General W. F. Stevenson, C.B., M.S. etc, etc. Professor of Military Surgery Royal Medical College, London, etc, etc.

"It will, I believe, be apparent from the view of the circumstances under which the wounded can be collected and carried from the field, that the old methods of performing these duties are no longer suitable to the present conditions of warfare and must be abandoned."

Also "The unattainable ideal must be given up and what is the best possible must be substituted for it. It need not be expected in future warfare, as formerly, that all the wounded shall be carried to the field hospitals, and their wants attended to, on the day of a battle; it will be a physical impossibility. As many of them as may be must be so cared for, and more than this cannot be hoped for from a medical service. The rest of the wounded must take their chance; and in proportion as these others are numerous, so will the horrors and sufferings of war be increased."

Were it possible to devise some means of quickly discriminating on the battlefield the more serious cases of wounds which require immediate surgical attendance from those which may safely be left to unskilled hands, though it would not solve the difficulty, it would greatly lessen it. It must be remembered that in making medical arrangements for war it is not the sick and wounded only which have to be considered but the *morale* of the army on which its fighting power depends, hence the medical arrangements must be so perfect that the army will have full confidence in them, and will go to battle fortified with the knowledge that everything which is possible will be done for them. It cannot be said that the existing medical organization begets this confidence, but to suggest how it is to be secured is one of the objects of this paper.

The impossibility of removing all the wounded to dressing stations and to the field hospitals on the day of battle has been fully demonstrated; the solution of this question will neither be found in any increase of transport, which is practicable nor in the shifting of responsibility from one department to another which has been frequently advocated but in the adoption of some means of succouring the wounded nearer to the battlefield. While the medical department must be held responsible for the



treatment, the general comfort, and the sanitary environment of the sick by road and by rail the responsibility for the equipage including vehicles, animals, and their attendants and for the general management must remain with the transport department, just as railway officials are held responsible for the railway plant, and trainservice, but the medical department must possess the authority to fix the hours for travelling and the rate of progress, which urgent military necessity alone should be allowed to interfere with, for upon compliance with these instructions the lives of the sick may depend. This is the principle underlying the medical organization of the Japanese Army, which we know is so admirable, it is that special work requires special agents, and that unskilled work may be left to unskilled hands.

The prevention of epidemic diseases in armies is the most important duty of the medical department in war; for the reasons already given the medical history of the South African war will be referred to in support of this statement. The following tables give the total casualties—deaths and invalids—from the beginning of the war up to the 31st of May 1902.\*

TABLE I.

DEATHS.	NON-COMMISSIONED OFFICERS AND MEN
Killed in action. . . . .	5,256
Died of wounds. . . . .	1,835
Prisoners who have died in captivity. . . . .	97
Died of disease. . . . .	12,911
Accidental deaths. . . . .	771
Total. . . . .	20,870

TABLE II.

INVALIDS SENT HOME.	NON-COMMISSIONED OFFICERS AND MEN.
Wounded . . . . .	8,221
Sick . . . . .	63,644
Not specified which. . . . .	449
Total. . . . .	72,314

\*These tables are extracted from the article: "The Medical Organization of Brigades and of General Hospitals in War" by Brigade Surgeon Lieutenant Colonel William Hill-Climo, M.D., Army Medical Staff (retired), in the December, 1902 number of the *United Service Magazine*.

Practically of the total number of casualties—deaths and invalids—the proportion due to disease, chiefly epidemic, compared with those caused by wounds—was 5 to 1. The two chief diseases which caused military inefficiency during the war were dysentery and enteric fever. The following table gives the admissions and death rates for these diseases during the first two years of the war.\*

	PERIOD.	ADMISSIONS.	DEATHS.	PERCENTAGE OF
				DEATHS TO ADMISSIONS.
For Dysentery	1st Year	11,143	546	4.9
	2nd Year	13,131	427	3.2
For Enteric Fever	1st Year	15,655	3,647	23.2
	2nd Year	15,463	2,530	16.3

The following summary of the facts is taken from this Report, which at the same time shows the relative importance of dysentery and enteric fever.

"During the two years beginning in October, 1899, and ending in September 1901 there were approximately 24,294 cases of dysentery with 973 deaths, while during the same period there were 31,118 cases of enteric fever with 6,172 deaths, which represents for enteric fever alone nearly an army corps."

And again, "The actual number of deaths from enteric fever amounted to more than six and a half times that of dysentery in the first year, and slightly less than six times in the second year."

The evidence of Lord Roberts, the Commander-in-Chief of the South African Army, is to the same effect more especially in regard to enteric fever.†

"I got to Bloemfontein on the 13th of March, and during the first week there were no deaths from enteric; it began in the second, and it continued gradually, very nearly in regular proportion, until about the middle or end of May. The total number of admissions from the 13th of March to the 13th November, 1900, for all cases, was 16,167, and of those 4,667 were enteric cases, roughly speaking. The deaths from all causes were 1,050 and of these 891 were enteric within that time."

\*Report of the Commission on "The Nature, Pathology, Causation and Prevention of Dysentery, and its Relationship to Enteric Fever," appointed by the Secretary of State for War.

†Report of the Royal Commission on the South African War.

For the prevention of epidemic diseases in war the Medical Department of no army with which I am acquainted is at the present time efficient because it has not the power to make adequate preparation in peace, and because in war it is not given executive authority for its responsibility for sanitation is shared with all other corps and departments, and is thus lost in many channels. In this ambiguity the relations of the medical department to the health of armies is defective; the position is an anomalous one, and cannot be defended. To enable the medical department to undertake the larger sphere of duty, which is suggested in this paper, and which public opinion, with its greater knowledge of modern warfare, demands from it, the following proposals are made.

1. The specialization of Medical officers.
2. The creation of a sanitary service.
3. The creation of a subordinate medical service.
4. The reform of the Nursing Service.
5. The Reorganization of the Army Medical Corps (non-commissioned officers and men).
6. The creation of a National Ambulance Service.

These proposals will be separately considered, they have been already referred to, but the grounds on which they are based require further explanation. The specialization of medical officers should be into three major groups namely physicians, surgeons, and sanitary or health officers. In the selection of candidates it will not be advisable to split up the profession in the way of specialities for the more general is the education of young medical officers the more useful will be their army career, but what is really necessary is to give those officers who show a special aptitude for any particular branch of medical science, the opportunity to cultivate it. Physicians should include officers skilled in tropical medicine, in fevers, and in the diseases of women and children. Surgeons would consist of operating surgeons, and specialists in ophthalmic, dental and aural surgery, etc., and the Sanitary group would consist of experts, and executive sanitary or health officers.

The employment of civilian physicians with armies in the field has been recently advocated on the grounds that army medical officers have not the knowledge and experience of dysentery, enteric fever and other diseases which are common in war. It is impossible to accept this conclusion for the greater number of army medical officers have had a large experience of these diseases in peace, it is especially true of the British medical service, which has had this experience in foreign garrisons and in small wars, and under the most diverse climatic conditions; this statement applies with equal force to the medical service of the regular army of the United States of America. It ought not to be necessary therefore to replace army medical officers by civilian physicians however desirable it may be to supplement their service in war; what however seems really desirable is departmental selection.

That army medical officers, who are confined to their military practice in peace, can in any great numbers be qualified for the post of operating surgeons is an impossibility; manual dexterity quickness of eye, and readiness of resource can only be gained by constant practice, therefore in time of war operating surgeons must be obtained from the civil profession, who practice in large centres of industry where trade accidents are numerous; the patriotism of the medical profession in all countries may be relied upon in times of national emergency. Army medical officers who show special aptitude, and who may be selected for the post of operating surgeon, should be deputed to civil hospitals, or should be associated in some other way with the work of profession in civil life. Armies, especially armies raised by voluntary enlistment, recruited from urban populations and engaged in manufactures, require to a large extent the services of specialists in dental, ophthalmic, and aural surgery.

The experts of the sanitary group would be bacteriologists, chemists and engineers, who need not be medical officers or military engineers; for some reasons it is desirable that they should be entirely independent of military authority for the nature of their work does not require military control. Fitness for office should alone determine their appointment and eminence in their





particular line should be so unquestioned as to command respect for their opinions. Executive sanitary or health officers should belong to the medical department, and they should be in active professional work, but this leads up to the second proposal.

The necessity for an army sanitary service has obtained universal acceptance though its constitution, as we have seen, is a subject of controversy. The reader, who has followed this paper so far will be prepared to admit that strong reasons have been given for this service being formed and worked by the medical department; it is on these lines that the present proposal is made, and no difficulty is anticipated in carrying it out once agreement is reached as to what should be its executive and administrative units; it is a truism to say that the object aimed at is efficiency in war but the tendency during peace is towards economy consequently sanitary appointments are frequently made to stations and to districts without any reference to what is necessary for war.

The executive sanitary unit must be the regiment or corps unit; in war it is the composition of the force and not locality which determines the distribution of the sanitary service for the force is constantly changing, and occupying new ground; the organization for war therefore must be adopted in peace, without it the sanitary service will never be efficient. To carry this out a medical officer should be appointed for a term of years to each regiment as the sanitary staff officer of the Colonel Commanding (a) to advise on all questions connected with the health of the regiment, and (b) to have command of its sanitary establishment, all other duties, which are now performed by the medical officers attached to regiments during war, should be performed by these officers in peace; they should make themselves thoroughly acquainted with the health of the men, they should investigate all cases of zymotic disease, and with this object they should keep registers of barracks and companies.

The regimental sanitary establishments of non-commissioned officers and men should be supplied by the sanitary service, but no objection would be made to regiments enlisting their own, provided that for training and for passing certain qualifying tests

they came under the orders of the sanitary service, only a small number would probably be so enlisted. It will be more convenient to defer further remarks on this subject until the reorganization of the medical corps is being considered.

The brigade is suggested as the administrative unit of the sanitary service, because of its compactness and because its component parts are not likely to be long separated, which is so important as it is not office work and paper superintendence which are required, but personal inspection. An active sanitary administrative officer of ripe experience supervising the health of his brigade, and advising the sanitary staff officers attached to regiments would do much to secure the military efficiency of the troops in war. I know of no more necessary reform, or one which holds out a greater promise of permanent usefulness, besides it would save the State the vast sums of money, which are now squandered in making good former neglect; without it the relation of the medical department to the health of the army it ministers to can never be satisfactory.

The creation of a subordinate medical service logically follows from the specialization of the medical department, without its co-operation is impossible for as already shown a great gulf separates medical officers from the non-commissioned officers and men of the army medical corps. If medical officers are to be set free from routine duties, many of which at the present time they alone are capable of performing, it must be through the help of an intelligent and well educated subordinate service. The technique demands it; whether we consider hospital economy, sanitation, or the care of the wounded on the battlefield we are confronted with the same necessity. There may be here and there found in the corps some exceptions, but what has to be considered is the capacity of the corps as a whole. The progressive spirit of the age demands from medical officers a standard of excellence, which some twenty or thirty years ago was unattainable. Has the whole corps shared in this progress? Decidedly not, nor is it possible with the present system of recruitment and training.

Candidates for the subordinate medical service should be youths between 16 and 18 years of age, of sound health, and of

good moral character preference being given to the sons of warrant and non-commissioned officers, and of old soldiers, which would be a recompense for good service, besides these lads would bring with them some idea of military life and being educated in military schools their education could be directed for this purpose. After undergoing a preliminary competitive examination those selected should be sent to a training college or school, and after passing out, they should be posted on probation for a year to a large military hospital. Candidates thus selected and trained would be of the greatest assistance to the medical department both in peace and in war; medical officers would be relieved from much anxiety, and would be able to devote themselves to the higher duties of their profession, and the chain of responsibility would be strengthened in its weakest part. If public opinion is to hold the medical department responsible for failure in war it must either sanction the creation of this service, or the establishment of medical officers must be largely increased to an extent, which would be financially ruinous.

The substitution of female nurses for male attendants has found general acceptance; so far as military conditions will permit it should become universal, therefore they should be employed in all hospitals during peace, and in general and stationary hospitals in war. Male attendants are only required in detention wards, in field hospitals, and in special wards for prisoners, lunatics, and venereal patients; women nurses have greatly added to the comfort of the sick, have relieved the medical department of many anxieties, and have raised the whole tone of military hospital life. It is a reform which is gladly welcomed and all the more as shadowing a fairer distribution of work between men and women in the near future; to relegate men to men's work will be a national gain.

For the purpose of this paper it is taken for granted that a subordinate medical service will be created, but, whether that be so or not, the reorganization of the medical corps cannot be very long deferred, for the medical departments must be divided into two branches (a) medical, and (b) sanitary. That is one of the lessons of modern wars which cannot be neglected. The re-

form of the nursing service facilitates this arrangement and so also does the amalgamation of the bearer company with its field hospital, which has been advocated by Sir Frederick Treves and by many others. The medical branch should be subdivided into (1) sick attendants, (2) cooks, (3) clerks, and (4) general duty orderlies. Sick attendants will be employed during peace within the limits assigned in the preceding paragraph, and in war in attendance on the wounded on the battlefield and during their removal as well as for duty in field hospitals. The standard of cooking in military hospitals requires improvement; it is wasteful and often coarsely done; the training of hospital cooks should be altogether on a higher plane. The clerical duties of the medical department in administrative offices and in hospitals are onerous and require a steady and hardworking staff. The general duty orderlies will be employed in supply and store duties, in the care of government property, and as the designation implies, in the general duties of the hospital, relieving nurses of certain manual work, which men can best perform.

In the proposal for the creation of the sanitary service its administrative and executive units were outlined but the consideration of the details of its organization was postponed as being more appropriate under the reorganization of the medical corps for the medical department must be both its master and teacher. At the present time there is a general movement in favor of having large district hospitals in which all the important cases of sickness which occur in the command would be treated; it is a very desirable arrangement not only in the interest of the sick, but for the education of the medical corps provided that nothing is done to lessen the responsibility of the officer commanding the hospital or to interfere with his authority over the establishment.

Of course such a position would be an impossible one without co-operation. Hence hospitals are organized into medical and surgical divisions each under its own immediate head. But I submit that this is insufficient, and that these hospitals require a separate sanitary establishment specially trained and under the command of a duly qualified officer who would be the sanitary staff officer of the officer commanding the hospital.



The suggestion is that the sanitary service should be organized in companies, the headquarters of the company being posted to the district hospital, and the detachments from it would be the executive units belonging to regiments, etc., serving in the district. The non-commissioned officers and men would be graded as follows. Warrant officers as first class sanitary inspectors, sergeants as second class, and corporals as assistant sanitary inspectors after being specially trained and after passing certain qualifying examinations for advancement to each grade; they would supervise the work and instruct the men of the branch in practical sanitation.

The adoption of these proposals imposes certain obligations upon the medical department and upon military authority. Briefly the position is restated as follows. If the health control of the medical department of armies is to be effective the department must fit itself for the duty by the high professional attainments of its officers, by the efficiency of its subordinate establishments, by co-operation and by a readjustment of its sanitary and medical duties to meet the altered conditions of modern warfare. On the other hand, military authority also must recognize this altered state of affairs, and must accord to the medical department greater freedom of action; if both are satisfied that military efficiency in war depends in the first place upon the health of the army there can be no difficulty in coming to an agreement; certainly, if the sphere of duty of the medical department remains restricted there will be always military inefficiency and medical failure in war.

Supposing that these proposals are adopted, one of the good results would be that the medical department would be so associated with the daily life of the army that in medical as well as in sanitary matters the medical corps would be its instructor. The officers and men of the medical branch doing duty in district hospitals would instruct the troops how to apply the first aid dressing, and what the general care of the wounded on the battlefield should be. While the sanitary branch of the corps, especially the executive units, would instruct regiments, etc., in personal hygiene, and in all the other matters which make for health

especially in relation to environment and to the prevention of zymotic diseases.

For the evolution of the medical department on the lines which are suggested in this paper it will take time, and time, as we know, is all important besides there will be wanted the experience, which will teach what should be omitted, what corrected, and what should be added; it is progress not perfection which is aimed at. Even with the most perfect medical organization, according to our present knowledge, it may happen in war that there may be periods of great sickness through sanitary faults and through circumstances over which a regenerated medical department has had no control. Of this contingency we have had no experience for the medical department of no army up to the present time has been so organized that it could have dealt satisfactorily even with the vices of sanitation which were of that army's own making.

Be this as it may, we know that in the great battles of the future it will be impossible for the medical department of any army to succor the wounded on the day of battle, and that much suffering and loss of life will be the consequence. I have recurred to this question because of its supreme importance, and because, until it is remedied as far as human effort can do so, the relations of the medical department to the health of armies will not be satisfactory. The creation of a subordinate medical service and the reorganization of the medical corps with the adoption of those other measures which have already been suggested will go a good way towards giving more skilled medical attendance in the field, but the true remedy is the creation of a national ambulance service. To treat this subject except in outline is impossible within my present limits, it will be sufficient to say that what is wanted is a homogeneous national ambulance service which can only be obtained by the exercise of some self-denial on the part of various societies, which will place the national good before social considerations. Sir Frederick Treves, in a letter to the *British Medical Journal* recently called attention to the admirable work done by the Japanese National Ambulance Society in the Russo-Japanese war, and the creation of a similar service has recently been suggested

for the British Army.\* Should this proposal meet with general acceptance it is hoped that it will lead to an international ambulance service, which would work under rules framed by another Geneva Convention; the present rules in any case require revision.

The social relations of the Medical Department to armies will be considerably modified should these proposals be adopted. With the personal side of the question I am not concerned except in so far as it influences public duty. But there is no doubt that from them there will grow up a greater sympathy between the medical department and armies which would be to the public advantage. It is said that a good General studies the character of his opponent and modifies his plans accordingly; if knowledge of character be useful to an opponent surely it is of not less account to men working for the same object. Social intercourse with the play of a little imagination and tact, a quality by the way which is often misapplied, will smooth over many difficulties.

The rank and title of medical officers have not yet been discussed though it is germane to the subject. I have thought it better to discuss the duties of the medical department and the position it should hold in reference to them in peace and in war for from this description the necessity of granting medical officers military rank and titles is incontestable. The principal on which this is based is that every individual whose duty brings him into contact with the soldier must have a recognised military position with which the title must correspond. To no service does this principle apply more closely than to the military medical service; the fact that the medical profession is the most altruistic of all professions enhances its claim and makes it still more necessary that the military rank and titles of medical officers should conform to those of the armies they belong to in every respect.

This question will probably occur to the reader. Why is it that, in discussing the relations of the Medical Department to the health of armies, the writer has dealt so largely with details of organization and with collateral subjects? It is because in all schemes of army organization and of departmental reforms there has been hitherto a tendency to be satisfied with a name or with

\*See Letter: "A National Ambulance Service" in the July 1904 number of the *United Service Magazine*.

some one special measure. As for instance changing divisions into districts, and districts into army corps, or giving them some territorial designation. It really would not matter only that people, in other words the Electorate, who are unacquainted with military affairs, become thereby lulled into a sense of false security. Again some special measure has been adopted such as (taking the Medical Department as an example) the amalgamation of the bearer company with its field hospital, or the creation of a Medical Staff College, and from them, admirable and most desirable as they are, medical efficiency in war is expected. In my opinion it would be as reasonable to expect that a man would be protected from the cold on a winter's day by dressing him in a top hat and frock coat only. I use this rough and ready illustration to show that the Medical Department must be built up bit by bit from the foundation, and must be maintained in peace as in war. It is this belief which has induced me to write this paper, which embodies the views I had formed of the relations the Medical Department should hold to the health of armies long before the Spanish American and the South African Wars occurred, and which these wars have so amply justified.













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